

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Y. Fujiwara et al. : Art Unit:
Serial No.: To Be Assigned : Examiner:
Filed: Herewith :
FOR: SIGNAL RECORDING APPARATUS :
AND METHOD, SIGNAL REPRODUCING :
APPARATUS AND METHOD, MEDIUM,
AND INFORMATION ASSEMBLY

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

S I R :

Prior to examination, please amend the above-identified application
as follows:

IN THE SPECIFICATION:

Please replace the paragraph beginning at page 2, line 19, with the
following:

One aspect of the present invention is a signal recording apparatus,
comprising:

Please replace the paragraph beginning at page 3, line 6, with the
following:

Another aspect of the present invention is the signal recording apparatus wherein said quantization step is a product of a basic quantization step and a multiplier factor to be combined with said basic quantization step, and

Please replace the paragraph beginning at page 3, line 15, with the following:

Still another aspect of the present invention is the signal recording apparatus wherein said quantization step is uniform in a macro block comprised of DCT blocks,

Please replace the paragraph beginning at page 3, line 23, with the following:

Yet another aspect of the present invention is the signal recording apparatus further comprising range conversion means of range converting said quantized signal using a range conversion multiplier factor which is represented as the power of 2,

Please replace the paragraph beginning at page 4, line 5, with the following:

Still yet another aspect of the present invention is the signal recording apparatus wherein said quantization step is a product of a basic quantization step and a multiplier factor to be combined with said basic quantization step, and

Please replace the paragraph beginning at page 4, line 20, with the following:

A further aspect of the present invention is the signal recording apparatus wherein the multiplier factor to be combined with said basic

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quantization step is the power of 2, said multiplier factor information being the power exponent,

Please replace the paragraph beginning at page 5, line 4, with the following:

A still further aspect of the present invention is the signal recording apparatus wherein said quantization step is uniform in a macro block comprised of DCT blocks,

Please replace the paragraph beginning at page 5, line 11, with the following:

A yet further aspect of the present invention is the signal recording apparatus wherein said signal has 12 bits,

Please replace the paragraph beginning at page 5, line 17, with the following:

A still yet further aspect of the present invention is a signal recording method, comprising the steps of:

Please replace the paragraph beginning at page 6, line 4, with the following:

A further aspect of the present invention is a signal reproducing apparatus, comprising:

Please replace the paragraph beginning at page 6, line 18, with the following:

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An additional aspect of the present invention is the signal reproducing apparatus wherein said quantized signal is range converted using a range conversion multiplier factor which is represented as the power of 2, and

Please replace the paragraph beginning at page 7, line 9, with the following:

A still additional aspect of the present invention is the signal reproducing apparatus wherein said quantization step used in quantizing the signal is a product of a basic quantization step and a multiplier factor to be combined with said basic quantization step, and

Please replace the paragraph beginning at page 7, line 24, with the following:

A yet additional aspect of the present invention is the signal reproducing apparatus wherein the multiplier factor to be combined with said basic quantization step is the power of 2, said multiplier factor information being the power exponent, and

Please replace the paragraph beginning at page 8, line 7, with the following:

A still yet additional aspect of the present invention is the signal reproducing apparatus wherein said quantization step used in quantizing said signal is uniform in a macro block composed of DCT blocks,

Please replace the paragraph beginning at page 8, line 14, with the following:

A supplementary aspect of the present invention is the signal reproducing apparatus wherein said quantization step configured is a product of a not greater value among the minimum value of the sums recorded for said DCT

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blocks within said macro block and the maximum value which the multiplier factor information for specifying the multiplier factor to be combined with the basic quantization step can take, and a quantization number recorded for each said macro block.

Please replace the paragraph beginning at page 8, line 23, with the following:

A still supplementary aspect of the present invention is a signal reproducing method, comprising the steps of:

Please replace the paragraph beginning at page 9, line 11, with the following:

A yet supplementary aspect of the present invention is a medium for carrying a program and/or the data for enabling a computer to execute all or some functions provided for means in whole or part of the invention wherein said medium can be processed by said computer.

Please replace the paragraph beginning at page 9, line 17, with the following:

A still yet supplementary aspect of the present invention is a medium for carrying a program and/or the data for enabling a computer to execute all or some operations provided for steps in whole or part of the invention wherein said medium can be processed by said computer.

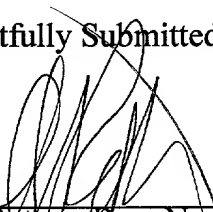
Please replace the paragraph beginning at page 9, line 22, with the following:

Another aspect of the present invention is an information assembly which is a program and/or the data for enabling a computer to execute all or some functions provided for means in whole or part of the invention.

Please replace the paragraph beginning at page 10, line 3, with the following:

Still another aspect of the present invention is an information assembly which is a program and/or the data for enabling a computer to execute all or some operations provided for steps in whole or part of the invention.

Respectfully Submitted,



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AR/dlm

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Kathleen Libby

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

SPECIFICATION:

Specification at page 2, line 19:

~~The 1st invention~~ One aspect of the present invention is a signal recording apparatus, comprising:

Specification at page 3, line 6:

~~The 2nd invention~~ Another aspect of the present invention is the signal recording apparatus ~~according to 1st invention~~, wherein said quantization step is a product of a basic quantization step and a multiplier factor to be combined with said basic quantization step, and

Specification at page 3, line 15:

~~The 3rd invention~~ Still another aspect of the present invention is the signal recording apparatus ~~according to 2nd invention~~, wherein said quantization step is uniform in a macro block comprised of DCT blocks,

Specification at page 3, line 23:

~~The 4th invention~~ Yet another aspect of the present invention is the signal recording apparatus ~~according to 1st invention~~, further comprising range conversion means of range converting said quantized signal using a range conversion multiplier factor which is represented as the power of 2,

Specification at page 4, line 5:

~~The 5th invention~~ Still yet another aspect of the present invention is the signal recording apparatus ~~according to 4th invention~~, wherein said quantization step is a product of a basic quantization step and a multiplier factor to be combined with said basic quantization step, and

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Specification at page 4, line 20:

~~The 6th invention~~ A further aspect of the present invention is the signal recording apparatus ~~according to 5th invention~~, wherein the multiplier factor to be combined with said basic quantization step is the power of 2, said multiplier factor information being the power exponent,

Specification at page 5, line 4:

~~The 7th invention~~ A still further aspect of the present invention is the signal recording apparatus ~~according to 6th invention~~, wherein said quantization step is uniform in a macro block comprised of DCT blocks,

Specification at page 5, line 11:

~~The 8th invention~~ A yet further aspect of the present invention is the signal recording apparatus ~~according to 7th invention~~, wherein said signal has 12 bits,

Specification at page 5, line 17:

~~The 9th invention~~ A still yet further aspect of the present invention is a signal recording method, comprising the steps of:

Specification at page 6, line 4:

~~The 10th invention~~ A further aspect of the present invention is a signal reproducing apparatus, comprising:

Specification at page 6, line 18:

~~The 11th invention~~ An additional aspect of the present invention is the signal reproducing apparatus ~~according to 10th invention~~, wherein said quantized signal is range converted using a range conversion multiplier factor which is represented as the power of 2, and

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Specification at page 7, line 9:

~~The 12th invention~~ A still additional aspect of the present invention is the signal reproducing apparatus according to ~~11th invention~~, wherein said quantization step used in quantizing the signal is a product of a basic quantization step and a multiplier factor to be combined with said basic quantization step, and

Specification at page 7, line 24:

~~The 13th invention~~ A yet additional aspect of the present invention is the signal reproducing apparatus according to ~~12th invention~~, wherein the multiplier factor to be combined with said basic quantization step is the power of 2, said multiplier factor information being the power exponent, and

Specification at page 8, line 7:

~~The 14th invention~~ A still yet additional aspect of the present invention is the signal reproducing apparatus according to ~~13th invention~~, wherein said quantization step used in quantizing said signal is uniform in a macro block composed of DCT blocks,

Specification at page 8, line 14:

~~The 15th invention~~ A supplementary aspect of the present invention is the signal reproducing apparatus according to ~~14th invention~~, wherein said quantization step configured is a product of a not greater value among the minimum value of the sums recorded for said DCT blocks within said macro block and the maximum value which the multiplier factor information for specifying the multiplier factor to be combined with the basic quantization step can take, and a quantization number recorded for each said macro block.

Specification at page 8, line 23:

~~The 16th invention~~ A still supplementary aspect of the present invention is a signal reproducing method, comprising the steps of:

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Specification at page 9, line 11:

~~The 17th invention-~~ A yet supplementary aspect of the present invention is a medium for carrying a program and/or the data for enabling a computer to execute all or some functions provided for means in whole or part of the invention according to any one of 1st to 8th and 10th to 15th inventions, wherein said medium can be processed by said computer.

Specification at page 9, line 17:

~~The 18th invention-~~ A still yet supplementary aspect of the present invention is a medium for carrying a program and/or the data for enabling a computer to execute all or some operations provided for steps in whole or part of the invention according to 9th or 16th inventions, wherein said medium can be processed by said computer.

Specification at page 9, line 22:

~~The 19th invention-~~ Another aspect of the present invention is an information assembly which is a program and/or the data for enabling a computer to execute all or some functions provided for means in whole or part of the invention according to any one of 1st to 8th and 10th to 15th inventions.

Specification at page 10, line 3:

~~The 20th invention-~~ Still another aspect of the present invention is an information assembly which is a program and/or the data for enabling a computer to execute all or some operations provided for steps in whole or part of the invention according to 9th or 16th inventions.

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